What the invention claimed is:

1. An air conditioning system comprising:

a lower layer air passage, said lower layer air passage having an outdoor air inlet, an outdoor air outlet, an indoor air inlet, an indoor air outlet, and air valves respectively mounted in said outdoor air inlet, said outdoor air outlet, said indoor air inlet and said indoor air outlet;

an upper layer air passage, said upper layer air passage having an outdoor air inlet, an outdoor air outlet, an indoor air inlet, an indoor air outlet, and air valves respectively mounted in said outdoor air inlet, said outdoor air outlet, said indoor air inlet and said indoor air outlet;

an intermediate air passage in communication between said lower layer air passage and said upper layer air passage, said intermediate air passage having installed therein a valve adapted to close/open the passage between said upper layer air passage and said lower layer air passage;

a compressor;

a condenser installed in said lower layer air passage;

a liquid accumulator;

an expansion valve;

an evaporator installed in said upper layer air passage;

a heater set between said condenser and said lower layer fan;

an upper layer fan installed in said upper layer air passage behind said evaporator;

a lower layer fan installed in said lower layer air passage behind the condenser; and

a valve control system adapted to control closing/opening of the valves in said lower layer air passage, said upper layer air passage and said intermediate air passage.

2. The air conditioning system as claimed in claim 1, which provides three modes:

(a) Heating and dehumidifying mode: where the valve control system opens the valve of said intermediate air passage, the indoor air inlet valve of said upper layer air passage, and the indoor air outlet valve of said lower layer air passage, and at the same time closes the outdoor air inlet valve, outdoor air outlet valve and indoor air outlet valve of said upper layer air passage and the outdoor air inlet valve, outdoor air outlet valve and indoor air inlet valve of said lower layer air passage; during this stage, said upper layer fan causes currents of indoor air to pass in direction from the inside of the house through said evaporator where air can be dehumidified in said upper layer air passage toward the inside of said intermediate air passage, and said lower layer fan draws currents of air from said upper layer air passage into said lower layer air passage through said condenser and said heater to let currents of air be heated then guided toward the house;

(b) Cooling and dehumidifying mode: where said valve control system closes the valve of said intermediate air passage, the outdoor air inlet valve and outdoor air outlet valve of said upper layer air passage, and the indoor air inlet valve and indoor air outlet valve of said lower layer air passage, and at the same time opens the indoor air inlet valve and indoor air outlet valve of said upper layer air passage and the outdoor air inlet valve and outdoor air outlet valve of said lower layer air passage, so that indoor air is prohibited from passing to said lower layer air passage inside of the air conditioning system, and outdoor air is prohibited from passing to said upper layer air passage inside of the air conditioning system; during this stage, said upper layer fan causes currents of indoor air to pass through said evaporator where air can be cooled and dehumidified in said upper layer air passage toward the indoor space of the house, and said lower layer fan draws currents of outdoor air from the outdoor space into said lower layer air passage to make a heat exchange with said condenser then to flow toward outdoor space, and therefore, the air conditioning system outputs cold air and removes humidity from air; and

(c) Warming mode: where said valve control system closes the valve of said intermediate air passage, the indoor air inlet valve and indoor air outlet valve of said upper layer air passage, and the outdoor air inlet valve and outdoor air outlet valve of said lower layer air passage, and at the same time opens the outdoor air inlet valve and outdoor air outlet valve of said upper layer air passage and the indoor air inlet valve and indoor air outlet valve of said lower layer air passage; during this stage, said upper layer fan causes currents of outdoor air to pass from the outdoor space to the inside of said upper layer air passage through said evaporator to make a heat exchange then toward the outdoor space of the house, and said lower layer fan draws currents of indoor air from the house into said lower layer air passage to make a heat exchange with said condenser where the air is heated then the hot air flows toward house.

3. The air conditioning system as claimed in claim 1, wherein said intermediate air passage is disposed in communication between the air output side of said upper layer air passage and the air input side of said lower layer air passage.

4. The air conditioning system as claimed in claim 1, wherein said heat is a thermostat-controlled heater that can be adjusted to heat air to one of a series of temperature levels.

5. The air conditioning system as claimed in claim 2, wherein said heater is controllable to heat air to the desired temperature level during Heating and dehumidifying mode.

6. The air conditioning system as claimed in claim 1, further comprising air sealing hoods provided in said upper layer air passage and said lower layer air passage around the respective valves to prevent air leakage and to guide flows of air.

7. The air conditioning system as claimed in claim 1, which is a split type air conditioning system having the main unit installed in the outside of the house with the control panel of the main unit disposed in the inside the house and electrically connected to the internal circuit of the main unit by electric wires wherein front panel of the main unit having upper and lower layer indoor air inlets and upper layer and lower layer indoor air outlets, an upper layer air inlet connector and a lower layer air inlet connector respectively installed in said upper and lower layer indoor air inlets, an upper layer air inlet air hose and a lower layer air inlet air hose respectively connected to said upper layer air inlet connector and said lower layer air inlet connector, said upper layer air inlet air hose and said lower layer air inlet air hose having a respective opposite end respectively connected to a three-way air inlet conduit, said three-way air inlet conduit having an air inlet end connected to an indoor air inlet conduit, which is in turn connected to an air inlet port in the ceiling inside the house, an upper layer air outlet connector and a lower layer air outlet connector respectively installed in said upper and lower layer

indoor air outlets, an upper layer air outlet air hose and a lower layer air outlet air hose respectively connected to said upper layer air outlet connector and said lower layer air outlet connector, said upper layer air outlet air hose and said lower layer air outlet air hose having a respective opposite end respectively connected to a three-way air outlet conduit, said three-way air outlet conduit having an air outlet end connected to an indoor air outlet conduit, which is in turn connected to an air outlet port in the ceiling inside the house.